

Release A CDR RID Report

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Originator Lynnes, Chris
Organization GSFC DAAC
E Mail Address lynnes@daac.gsfc.nasa.gov
Document CDR

Phone No (301)286-2260

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Priority	2

Section Human-Machine-Interface **Page** JL-4

Figure Table

~~Methodology and GUI~~

Category Name DAAC Operations

Actionee ECS

Sub Category

Subject Caveats on Workflow Analysis in HMI

Description of Problem or Suggestion:

Workflow analysis is definitely an essential part of the HMI design of the Operator Tools, BUT: the variety of DAAC methods and organizations will lead to divergence in workflows among DAACs, a divergence that will increase over time as the DAACs re-engineer workflows autonomously to maximize efficiency. Operator tools which encode the initial workflow analysis too closely will thwart this evolution, requiring code changes in the tool if changes in the workflow are desired.

Originator's Recommendation

Use the Object-Oriented development model to provide reasonably atomic services that can be strung together by the DAACs in different arrangements depending on DAAC variations in workflow. Provide a baseline set of arrangements, along with mechanisms to allow the DAACs to modify them or add new ones, without "code" modifications or ESDIS CCB approval. A model for this is Office Automation programs, which provide atomic services, plus "Wizards" and/or macros to step users through common tasks. Mac OS 7.5's Automated Tasks is another model.

GSFC Response by:

GSFC Response Date

HAIS Response by: John Lowry, Paul Van Hemel

HAIS Schedule 9/20/95

HAIS R. E. John Lowry, Paul

HAIS Response Date 9/29/95

1. We agree that workflow analysis is an essential part of the HMI design of the Operator Tools. The workflow analysis is designed to identify elemental operator tasks that the Operator Tools must support. It is not intended as a means of defining jobs at the DAACs. We are sensitive to the concern that the tools not encode job workflows closely, and that it is important to provide flexibility in the tools so that code changes are not required to accommodate changes made to maximize efficiency. The design paradigm incorporates features that foster flexibility in the flow of work, and to provide still greater flexibility we are implementing two changes from the GUI design approach presented at CDR, as described in paragraph 3. We invite more detailed examination of the concepts and screen designs and welcome specific feedback during subsystem screen reviews.

2. The design paradigm fosters flexibility in the flow of work. Features of screen design that provide this flexibility are illustrated in Figure 1, which shows a sample graphical user interface screen for an ECS subsystem. As the attached figure shows, the design provides for a toolbar across the top of the screen. In the finished product, the buttons on the toolbar, always present, will be process icon buttons. The processes represented are elemental functions, and the operator may select any of the icon buttons in any sequence at any time to bring controls/displays for the functions into the workspace in the center of the window, moving freely between functions without loss of data. The workflow analysis identified the elemental tasks within the functions and identified related functional task clusters resulting in the functional groups of controls and displays on the GUI. For example, Figure 1 shows three groups for the Media Ingest function:

- Media Type
 - External Data Provider Information
 - DAN File Location.

In the Motif GUI environment, the operator is not forced into a rigid sequence of work flow, but is free to interact with these functional groups in any sequence, selecting the desired group with the mouse.

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3. The recommendation by the RID originator to provide reasonably atomic services that can be strung together by the DAACs in different arrangements has been evaluated in view of several factors. Resultant action can provide some improved flexibility, but

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In the Motif GUI environment, the operator is not forced into a rigid sequence of work flow, but is free to interact with these functional groups in any sequence, selecting the desired group with the mouse.

3. The recommendation by the RID originator to provide reasonably atomic services that can be strung together by the DAACs in different arrangements has been evaluated in view of several factors. Resultant action can provide some improved flexibility, but the design must avoid adverse effects on ECS subsystem integrity, preclude excessive development costs for an atomic system with flexibility for large numbers of possible GUI configurations, prevent adverse effects of GUI fragmentation on effective and systematic integration of COTS and HTML applications, and ensure reasonable return on investment given a climate of declining budgets. To increase the flexibility in ECS operator/user interfaces while maintaining the basic style and common look and feel engendered by the ECS User Interface Style Guide, it is planned to incorporate two changes to the GUI design approach. First, the style will be implemented through use of the a Builder Xcessory feature directing screen element resources to be taken from a defaults file that may be overridden (e.g., by the X Resource Database). This will allow the DAACs to modify them without "code" modifications. Second, where reasonable, the design will build in flexibility in the location within the workbench workspace where functional groups of controls and displays appear, selectable by the operator without "code" modifications. This change, implemented where feasible, along with the use of the style defaults file that may be overridden, will provide flexibility to accommodate reasonable DAAC variations in workflow, while providing default ("Wizard" or "macro") GUIs to support operations scenarios and accomplish the objectives of the program.

Status **Closed**

Date Closed **10/18/95**

Sponsor **Hunolt**

***** Attachment if any *****

<u>F</u> ile	<u>E</u> dit	<u>M</u> ode	<u>H</u> elp				
Monitor	Control	History	Threshold	Media	Template	Electronic	Document
<div>Media Type:<ul style="list-style-type: none">◆ CD-ROM◆ 8mm-Tape◆ 9mm-Tape</div>							

8mm-Tape

~ 9mm-Tape

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External Data Provider	<input type="text"/>
Media Volume	<input type="text"/>
Media Count	<input type="text"/>
DAN File Location:	
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<input type="checkbox"/> Embedded in Media	
<div>OKCancelExit</div>	